

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Attorney Docket No. 14211US03

In the Application of:

Ronald L. Mahany

U.S. Serial No.: 10/648,747

Filed: October 14, 2003

For: SPREAD SPECTRUM TRANSCEIVER  
MODULE UTILIZING MULTIPLE  
MODE TRANSMISSION

Examiner: Young Toi Tse

Group Art Unit: 2611

Confirmation No.: 4061

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/Michael T. Cruz/

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**APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

A Notice of Appeal was received by the United States Patent and Trademark Office on August 18, 2008 for the above-identified patent application. A Petition for a Two-Month Extension is enclosed, thereby extending the deadline by which to file an Appeal Brief to December 18, 2008.

U.S. Application No. 10/684,747, filed December 9, 2008  
Attorney Docket No. 14211US03  
Appeal Brief dated December 18, 2008  
In Support of Notice of Appeal received by USPTO on August 18, 2008

### **REAL PARTY IN INTEREST**

Broadcom Corporation, a corporation organized under the laws of the state of California and having a place of business at 5300 California Avenue, Irvine, California 92617, has acquired the entire right, title and interest in and to the invention, the application, and any and all patents to be obtained therefor.

### **RELATED APPEALS AND INTERFERENCES**

There are currently no appeals or interferences pending regarding related applications.

### **STATUS OF THE CLAIMS**

Claims 1-10, 21 and 37 have been cancelled without prejudice. Claims 11-20, 22-36 and 38-42 are pending and have been rejected. The rejection of claims 11-20, 22-36 and 38-42 is being appealed.

### **STATUS OF AMENDMENTS**

A Response After Office Action Made Final was filed August 18, 2008. Claims 11, 16, 24, 32, 38 and 40 were amended. In response thereto, an Advisory Action was mailed on September 8, 2008. In the Advisory Action, the Examiner entered the amendment to the claims and noted that "Applicant's reply has overcome the following rejections(s): the objections of claims 11-18, 24, 32, and 41 and the rejections of claims 17, 24-25, 33, and 38-41."

### **SUMMARY OF CLAIMED SUBJECT MATTER**

Some embodiments according to some aspects of the present invention may provide, for example, portable data processing device sized to be carried by a human user as set forth, for example, in claim 11. The portable data processing device may include, for example, a wireless radio transceiver and a controller. The wireless radio transceiver

In Support of Notice of Appeal received by USPTO on August 18, 2008

may be arranged to transmit with a first type of spread spectrum modulation and a second type of spread spectrum modulation and to receive with the first type of spread spectrum modulation and the second type of spread spectrum modulation. The controller may be arranged to automatically select one of the first type of spread spectrum modulation and the second type of spread spectrum modulation.

Some embodiments according to some aspects of the present invention may provide, for example, a portable data processing device sized to be carried by a human user as set forth, for example, in claim 19. The portable data processing device may include, for example, a wireless radio transceiver that is capable of processing radio communications according to a first protocol used for communications in a first frequency range and is capable of processing radio communications according to a second protocol used for communications in a second frequency range different from the first frequency range. The radio transceiver may be arranged to transmit using a first type of spread spectrum modulation and a second type of spread spectrum modulation. The radio transceiver may be arranged to receive using the first type of spread spectrum modulation and the second type of spread spectrum modulation.

Some embodiments according to some aspects of the present invention may provide, for example, circuitry suitable for use in a portable data processing device sized to be carried by a human user as set forth, for example, in claim 27. The circuitry may include, for example, a wireless radio transceiver and a controller. The wireless radio transceiver may be arranged to transmit with a first type of spread spectrum modulation and a second type of spread spectrum modulation and to receive with the first type of spread spectrum modulation and the second type of spread spectrum modulation. The controller may be arranged to automatically select one of the first type of spread spectrum modulation and the second type of spread spectrum modulation.

Some embodiments according to some aspects of the present invention may provide, for example, circuitry suitable for use in a portable data processing device sized to be carried by a human user as set forth, for example, in claim 35. The circuitry may include, for example, a wireless radio transceiver that is capable of processing radio communications according to a first protocol used for communications in a first

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

frequency range and is capable of processing radio communications according to a second protocol used for communications in a second frequency range different from the first frequency range. The radio transceiver may be arranged to transmit using a first type of spread spectrum modulation and a second type of spread spectrum modulation. The radio transceiver may be arranged to receive using the first type of spread spectrum modulation and the second type of spread spectrum modulation.

### **GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 11-15, 17-20, 22, 23, 25-31, 33-36, 38, 39, 41 and 42 are unpatentable under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 5,887,020 to Douglas G. Smith et al. ("Smith") in view of United States Patent No. 5,022,046 to Robert K. Morrow, Jr. ("Morrow").

Whether claims 16, 24, 32 and 40 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Smith in view of Morrow and further in view of United States Patent No. 5,131,019 to Eliezer A. Sheffer et al. ("Sheffer").

Whether claim 41 is unpatentable under 35 U.S.C. § 112, ¶ 1, as allegedly failing to comply with the enablement requirement.

### **ARGUMENT**

#### **I. REJECTION UNDER 35 U.S.C. § 103(a)**

##### **A. Claims 11-15, 17 and 18**

Claims 11-15, 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 5,887,020 to Douglas G. Smith et al. ("Smith") in view of United States Patent No. 5,022,046 to Robert K. Morrow, Jr. ("Morrow"). Appellant respectfully requests that the rejection be reversed for at least the reasons as set forth below.

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

Claim 11 recites, in part, “a wireless radio transceiver arranged to transmit with a first type of spread spectrum modulation and a second type of spread spectrum modulation and to receive with the first type of spread spectrum modulation and the second type of spread spectrum modulation”.

According to the Examiner, Smith at FIG. 1 illustrates that “each of the transmitter 1 and the receiver 7 comprises a mode controller 103 and a mode select switch 104 for selecting either a first type of modulation (spread spectrum) or a second type of modulation (narrowband).” Office Action Made Final mailed April 16, 2008 (“Office Action Made Final”) at page 4. In addition, the Examiner cites Smith at col. 6, lines 11-49; col. 7, lines 1-22; and col. 8, lines 23-39 and 50-62.

However, the Examiner admits that “Smith does not explicitly show, suggest or teach that both the first type of modulation and the second type of modulation are spread spectrum modulations, as recited in claims 11, 19, 27, and 35.” Office Action Made Final at page 4.

As part of the Examiner’s *prima facie* case of obviousness, the Examiner alleges that Morrow makes up for the teaching deficiencies of Smith. In particular, the Examiner alleges that “Morrow, Jr. also teaches that a packet transceiver shown in Figure 1 or Figure 2 is capable of operating two modes: narrowband and wideband. In the narrowband mode, a sequence generator 22 outputs a non-spreading waveform; i.e., for direct sequence, the ‘all ones’ code is produced, and for frequency hopping, a single frequency is selected. When the radio is operating in the wideband mode, the sequence generator produces a long spreading code sequence which is common to all radios in the network. See col. 6, lines 66 to col. 7, line 7.” Office Action Made Final at pages 4-5.

According to the Examiner, “[t]herefore, it would have been obvious to one of ordinary skill in the art as taught by Morrow, Jr. such that Smith’s first type of modulation is a narrowband modulation which is a direct sequence if ‘all ones’ code is produced, a frequency hopping if a single frequency is selected.” Office Action Made Final at page 5.

As alleged by the Examiner and to the extent that the Examiner's allegation is understood by Appellant, both Smith and Morrow describe a communication system that can transmit **either** by using wideband **or** by using narrowband.

For example, Smith at FIG. 2 shows that the transmitter can send TRANSMIT INFORMATION through the MODE SELECT SWITH 104 to **either** the NARROWBAND MODULATOR 113 **or** SPREAD SPECTRUM MODULATOR 111.

Since narrowband modulation is different from spread spectrum modulation, as admitted by the Examiner, Smith at FIG. 2 does not appear to meet "a wireless radio transceiver arranged to transmit with a **first type of spread spectrum modulation and a second type of spread spectrum modulation**" as set forth in claim 11.

Although offered by the Examiner to overcome the teaching deficiencies of Smith, Morrow does not make up for the teaching deficiencies of Smith.

For example, as cited by the Examiner, with respect to Morrow at FIG. 1, "[t]he transceiver is capable of operating in two modes: narrowband and wideband." Morrow at col. 6, line 67 to col. 1, line 1.

Since narrowband modulation is different from spread spectrum modulation, Morrow, as alleged by the Examiner, does not appear to meet "a wireless radio transceiver arranged to transmit with a **first type of spread spectrum modulation and a second type of spread spectrum modulation**" as set forth in claim 11.

Appellant respectfully draws the attention of the Board to the Examiner's *prima facie* case in which the Examiner describes Smith and Morrow as teaching the same concept. In particular as alleged by the Examiner, both Smith and Morrow teach a transmitter that can transmit **either** in narrowband **or** in wideband.

Thus, neither Smith nor Morrow, as alleged by the Examiner and to the extent that the Examiner's allegation is understood by Appellant, teaches "a wireless radio transceiver arranged to transmit with a **first type of spread spectrum modulation and a second type of spread spectrum modulation**" as set forth in claim 11.

However, taking the Examiner's alleged *prima facie* case of obviousness on its face, it is clear that since both Smith and Morrow teach a transmitter that can transmit **either** in narrowband **or** in wideband, then neither Smith nor Morrow teaches "a wireless

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

radio transceiver arranged to transmit with a **first type of spread spectrum modulation and a second type of spread spectrum modulation**" as set forth in claim 11.

In particular, the Examiner's concludes "[t]herefore, it would have been obvious to one of ordinary skill in the art as taught by Morrow, Jr. such that Smith's first type of modulation is a narrowband modulation which is a direct sequence if 'all ones' code is produced, a frequency hopping if a single frequency is selected."

Even in the Examiner's conclusion, the Examiner still uses the narrowband modulation of Smith. If the modification of Smith still creates a narrowband modulation, then the modification of Smith does not meet at least the following elements "a wireless radio transceiver arranged to transmit with a **first type of spread spectrum modulation and a second type of spread spectrum modulation**" as set forth in claim 11.

Since the Examiner's *prima facie* case of obviousness does not teach each and every element as set forth in claim 1, the obviousness rejection cannot be maintained.

It is therefore respectfully requested that the obviousness rejection be reversed with respect to claim 11 and its rejected dependent claims (i.e., claims 12-15, 17 and 18).

**B. Claims 19, 20, 22, 23, 25-31, 33-36, 38, 39, 41 and 42**

Claims 19, 20, 22, 23, 25-31, 33-36, 38, 39, 41 and 42 also stand rejected under 35 U.S.C. § 103(a) as being obvious over Smith in view of Morrow. Appellant respectfully requests that the rejection be reversed for at least the reasons as set forth below.

Independent claim 19 recites "wherein the radio transceiver is arranged to transmit using a first type of spread spectrum modulation and a second type of spread spectrum modulation".

Independent claim 27 recites "a wireless radio transceiver arranged to transmit with a first type of spread spectrum modulation and a second type of spread spectrum modulation and to receive with the first type of spread spectrum modulation and the second type of spread spectrum modulation".

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

Independent claim 35 recites “wherein the radio transceiver is arranged to transmit using a first type of spread spectrum modulation and a second type of spread spectrum modulation”.

Accordingly, the same or similar arguments, if applicable, made with respect to independent claim 11 can also be made with respect to independent claims 19, 27 and 35.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect to independent claims 19, 27 and 35 and their rejected dependent claims (i.e., claims 20, 22, 23, 25, 26, 28-31, 33, 34, 36, 38, 39, 41 and 42).

#### C. Claims 13, 23, 29 and 39

Dependent claims 13, 23, 29 and 39 depend indirectly from independent claims 11, 19, 27 and 35, respectively. Accordingly, the arguments made with respect to independent claims 11, 19, 27 and 35 are also applicable to claims 13, 23, 29 and 39.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect dependent claims 13, 23, 29 and 39.

In addition, dependent claims 13, 23, 29 and 39 depend from claims 12, 22, 28 and 38. Thus, since dependent claims include all the elements of their independent claims and any intervening claims, dependent claims 13, 23, 29 and 39 state that the second type of spread spectrum modulation is frequency hopping spread spectrum modulation and, from intervening claims, the first type of spread spectrum modulation is direct sequence spread spectrum modulation.

With respect to the Examiner’s alleged *prima facie* case of obviousness, as best understood by Appellant, the Examiner is alleging (from the teaching in Morrow) a direct sequence if “all ones” code is produced or a frequency hopping if a single frequency is selected. See Office Action Made Final at pages 3-5.

However, the claim language recites frequency hopping *spread spectrum modulation* or direct sequence *spread spectrum modulation*. The problem with the special case of a single frequency or using “all ones” code is that this is not spread

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

spectrum modulation. First, single frequency transmissions are narrowband. Second, there is no spreading if the code used is “all ones”.

Even Morrow supports this interpretation by noting that “[i]n the narrowband mode, a sequence generator 22 outputs a non-spreading waveform; i.e., for direct-sequence, the ‘all ones’ code is produced, and for frequency-hopping, a single frequency is selected.” Morrow at col. 7, lines 1-4 (emphasis added).

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect dependent claims 13, 23, 29 and 39.

#### D. Claims 17, 18, 25, 26, 33, 34, 41 and 42

Claims 17, 18, 25, 26, 33, 34, 41 and 42 depend from independent claims 11, 19, 27 and 35, respectively. Accordingly, the arguments made with respect to independent claims 11, 19, 27 and 35 are also applicable to claims 17, 18, 25, 26, 33, 34, 41 and 42.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect dependent claims 17, 18, 25, 26, 33, 34, 41 and 42.

In addition, with respect to claims 17, 18, 25, 26, 33, 34, 41 and 42, the Examiner alleges, without any documentary proof, that “it is well known to a skilled person in the art to provide a laptop or wireless communication or a desktop computer for wire communication with a communication transceiver or a hand held size as the hand held device 13 to be held in one hand or a user”.

Appellant respectfully challenges what is allegedly well known. It is believed that the Examiner has considered a “laptop computer” as set forth in claims 17, 25, 33 and 41 *in a vacuum* instead of considering the “laptop computer” *in the context* of the elements as set forth in independent claims 11, 19, 27 and 35, respectively, in compliance with the statutory requirements of a *prima facie* case of obviousness under 35 U.S.C. § 103(a).

Appellant respectfully submits that, *in the context*, for example, of elements as set forth in independent claim 11, the elements as set forth in claim 17 are not obvious or well known.

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

In fact, for at least the reasons as set forth above, the Examiner's prima facie case of obviousness cannot be maintained. Accordingly, since Smith in view of Morrow, as alleged by the Examiner, does not teach each and every element as set forth in claim 11, the elements as set forth in claim 17 *in the context* of the elements as set forth in claim 11 are not and cannot be obvious or well known.

The same or similar arguments that were made with respect to claim 17 are also made, if applicable, with respect to claims 18, 25, 26, 33, 34, 41 and 42.

In addition, "assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art." M.P.E.P. § 2143.03. Clearly, here, the Examiner is making assertions of technical facts in the areas of esoteric technology (e.g., *in the context* of spread spectrum modulation devices), which is improper.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect dependent claims 17, 18, 25, 26, 33, 34, 41 and 42.

It is also respectfully requested that the Board direct the Examiner to produce documentary evidence in support of the obviousness rejection of claims 17, 18, 25, 26, 33, 34, 41 and 42 in compliance with M.P.E.P. § 2143.03, or to provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding if the Examiner is relying on personal knowledge in compliance with 37 C.F.R. § 1.104(d)(2). Lastly, if documentary evidence is produced by the Examiner, M.P.E.P. § 2143.03 appears to imply that the Examiner must cite not merely a reference work, but a reference work that is recognized as a standard in the pertinent art.

#### E. Claims 16, 24, 32 and 40

Claims 16, 24, 32 and 40 stand rejected under 35 U.S.C. § 103(a) as being obvious over Smith in view of Morrow and further in view of United States Patent No. 5,131,019 to Eliezer A. Sheffer et al. ("Sheffer"). Appellant respectfully requests that the rejection be reversed for at least the reasons as set forth below.

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

Claims 16, 24, 32 and 40 depend from independent claims 11, 19, 27 and 35, respectively. Accordingly, the arguments made with respect to independent claims 11, 19, 27 and 35 are also applicable to dependent claims 16, 24, 32 and 40.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect dependent claims 16, 24, 32 and 40.

## **II. REJECTION UNDER 35 U.S.C. § 112, ¶ 1**

Claim 41 stands rejected under 35 U.S.C. § 112, ¶ 1, as allegedly failing to comply with the enablement requirement. Office Action Made Final at page 2. Appellant respectfully requests that the rejection be reversed for at least the reasons as set forth below.

Claim 41 recites “The circuitry of claim 35 wherein the device is a laptop computer”. Claim 41 depends from claim 35 which refers to “Circuitry suitable for use in a portable data processing device”. Thus, claim 41 clarifies claim 35 such that it is now circuitry suitable for use in a portable data processing device, wherein the device is a laptop computer.

The Examiner is essentially arguing that one of ordinary skill in the art can make, without undue experimentation, circuitry suitable for use in a portable data processing device, but that one of ordinary skill in the art could not make, without undue experimentation, circuitry suitable for use in a portable data processing device, wherein the device is a laptop computer.

Appellant respectfully submits, for the Board’s approval, that if one of ordinary skill in the art can make, without undue experimentation, circuitry suitable for use in a portable data processing device, then one of ordinary skill in the art could also make, without undue experimentation, circuitry suitable for use in a portable data processing device, wherein the device is a laptop computer.

In addition, the Examiner has taken a logically inconsistent position with respect to the rejection of claim 41 under 35 U.S.C. § 103(a) in which the Examiner alleges that

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

"it is well known to a skilled person in the art to provide a laptop" for wireless communication. Office Action Made Final at page 5.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed with respect dependent claim 41.

### **III. CONCLUSION**

For the foregoing reasons, it is believed that claims 11-20, 22-36 and 38-42 are patentable over the alleged prior art of record. Reversal of the Examiner's rejection of claims 11-20, 22-36 and 38-42 is therefore respectfully requested, thereby placing claims 11-20, 22-36 and 38-42 in condition for allowance. Accordingly, issuance of a patent on the application is therefore respectfully requested.

The Commissioner is hereby authorized to charge any additional fees, to charge any fee deficiencies or to credit any overpayments to the deposit account of McAndrews, Held & Malloy, Account No. 13-0017.

Dated: December 18, 2008

Respectfully submitted,

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## **CLAIMS APPENDIX**

The following claims are involved in this appeal:

11. A portable data processing device sized to be carried by a human user comprising:

a wireless radio transceiver arranged to transmit with a first type of spread spectrum modulation and a second type of spread spectrum modulation and to receive with the first type of spread spectrum modulation and the second type of spread spectrum modulation; and

a controller arranged to automatically select one of the first type of spread spectrum modulation and the second type of spread spectrum modulation.

12. The device of claim 11 wherein the first type of spread spectrum modulation is direct sequence spread spectrum modulation.

13. The device of claim 12 wherein the second type of spread spectrum modulation is frequency hopping spread spectrum modulation.

14. The device of claim 11 wherein the transceiver is capable of processing radio communications according to a first protocol used for communications in a first frequency range and is capable of processing radio communications according to a second protocol used for communications in a second frequency range different from the first frequency range.

15. The device of claim 14 wherein the second frequency range includes 2.4 GHz.

16. The device of claim 11 further comprising a modem transceiver arranged to provide wired communication wherein the controller is arranged to select at least one of the radio transceiver and the modem transceiver.

17. The device of claim 11 wherein the device comprises a laptop computer.

18. The device of claim 11 wherein the device is sized to be held in one hand of the user.

19. A portable data processing device sized to be carried by a human user comprising a wireless radio transceiver capable of processing radio communications according to a first protocol used for communications in a first frequency range and is capable of processing radio communications according to a second protocol used for communications in a second frequency range different from the first frequency range, wherein the radio transceiver is arranged to transmit using a first type of spread spectrum modulation and a second type of spread spectrum modulation, and wherein the radio transceiver is arranged to receive using the first type of spread spectrum modulation and the second type of spread spectrum modulation.

20. The device of claim 19 wherein the second frequency range includes 2.4 GHz.

22. The device of claim 19 wherein the first type of spread spectrum modulation is direct sequence spread spectrum modulation.

23. The device of claim 22 wherein the second type of spread spectrum modulation is frequency hopping spread spectrum modulation.

24. The device of claim 19 further comprising a modem transceiver arranged to provide wired communication wherein a controller is arranged to select at least one of the radio transceiver and the modem transceiver.

25. The device of claim 19 wherein the device comprises a laptop computer.

26. The device of claim 19 wherein the device is sized to be held in one hand of the user.

27. Circuitry suitable for use in a portable data processing device sized to be carried by a human user comprising:

a wireless radio transceiver arranged to transmit with a first type of spread spectrum modulation and a second type of spread spectrum modulation and to receive with the first type of spread spectrum modulation and the second type of spread spectrum modulation; and

a controller arranged to automatically select one of the first type of spread spectrum modulation and the second type of spread spectrum modulation.

28. The circuitry of claim 27 wherein the first type of spread spectrum modulation is direct sequence spread spectrum modulation.

29. The circuitry of claim 28 wherein the second type of spread spectrum modulation is frequency hopping spread spectrum modulation.

30. The circuitry of claim 27 wherein the radio transceiver is capable of processing radio communications according to a first protocol used for communications in a first frequency range and is capable of processing radio communications according to a second protocol used for communications in a second frequency range different from the first frequency range.

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

31. The circuitry of claim 30 wherein the second frequency range includes 2.4 GHz.

32. The circuitry of claim 27 further comprising a modem transceiver arranged to provide wired communication wherein the controller is arranged to select at least one of the radio transceiver and the modem transceiver.

33. The circuitry of claim 27 wherein the device comprises a laptop computer.

34. The circuitry of claim 27 wherein the device is sized to be held in one hand of the user.

35. Circuitry suitable for use in a portable data processing device sized to be carried by a human user comprising a wireless radio transceiver capable of processing radio communications according to a first protocol used for communications in a first frequency range and is capable of processing radio communications according to a second protocol used for communications in a second frequency range different from the first frequency range, wherein the radio transceiver is arranged to transmit using a first type of spread spectrum modulation and a second type of spread spectrum modulation, and wherein the radio transceiver is arranged to receive using the first type of spread spectrum modulation and the second type of spread spectrum modulation.

36. The circuitry of claim 35 wherein the second frequency range includes 2.4 GHz.

38. The circuitry of claim 35 wherein the first type of spread spectrum modulation is direct sequence spread spectrum modulation.

39. The circuitry of claim 38 wherein the second type of spread spectrum modulation is frequency hopping spread spectrum modulation.

U.S. Application No. 10/684,747, filed December 9, 2008

Attorney Docket No. 14211US03

Appeal Brief dated December 18, 2008

In Support of Notice of Appeal received by USPTO on August 18, 2008

40. The circuitry of claim 35 further comprising a modem transceiver arranged to provide wired communication wherein a controller is arranged to select at least one of the radio transceiver and the modem transceiver.

41. The circuitry of claim 35 wherein the device is a laptop computer.

42. The circuitry of claim 35 wherein the device is sized to be held in one hand of the user.

U.S. Application No. 10/684,747, filed December 9, 2008  
Attorney Docket No. 14211US03  
Appeal Brief dated December 18, 2008  
In Support of Notice of Appeal received by USPTO on August 18, 2008

## **EVIDENCE APPENDIX**

None.

U.S. Application No. 10/684,747, filed December 9, 2008  
Attorney Docket No. 14211US03  
Appeal Brief dated December 18, 2008  
In Support of Notice of Appeal received by USPTO on August 18, 2008

**RELATED PROCEEDINGS APPENDIX**

None.